

# MU ALPHA THETA NEWSLETTER

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## NEWS FROM THE PRESIDENT

I am honored and excited to be serving as your president for the next two years. I have been associated with Mu Alpha Theta since 1998 when I served as a sponsor at Auburn High School in Auburn, AL. Since 2005, I have been the sponsor at Vestavia Hills High School in Vestavia Hills, AL. I served as Region III Governor from 2006-2010 and was a co-host of the 2011 National Convention. I look forward to having the opportunity to work with all the Mu Alpha Theta chapters in the national organization.

Also new on the Governing Council is NCTM Representative Laura Entrekin from Hoover High School in Hoover, AL. I have known Laura for several years and I know that she will do an outstanding job for us. This is an election year for positions on the Mu Alpha Theta Governing Council. Positions to be filled are President-Elect and Governors from Regions III and IV. As a sponsor, if you are interested in running for office or know of anyone who has expressed an interest in running, please contact Kay Weiss at the National Office.

The 2013 National Convention was held at the Town & Country Resort in San Diego, CA. Tom Tosch from Mount Rainier High School in Des Moines, WA, and Tom Norris from Thomas Jefferson High School in Auburn, WA hosted the convention and did an outstanding job. We enjoyed a week of great weather, fun excursions, and excellent competitions. Congratulations to Buchholz High School from Gainesville, FL for winning its seventh consecutive sweepstakes championship. Steve Han of Buchholz High School won the prestigious Kalin Award. Sponsor awards went to Kim Woolfenden of Tampa Bay Technical High School (Huneke Award) and Trung Vong of Seminole High School (Sister Scholastica Award).

The Mu Alpha Theta website contains a host of information that you will find helpful when planning for the new school year; information on such things as scholarships, sponsor and student awards, chapter and convention grants, free contests, and National Convention information, just to name a few. You can also log in to your account to find schools in your area that also have chapters. Perhaps you can exchange club activity ideas or partner up to host a competition. Please remind senior students of the many scholarships that are available from Mu Alpha Theta, and strongly encourage them to apply.

If you are looking for some money to participate in a competition or to put on a club activity, Chapter Grants of up to \$1000 are available. Ideas for using a Chapter Grant can be found on our website.

Begin planning now for the 2014 National Convention in Orlando! The convention will be held July 20-25 at the DoubleTree Hotel at the entrance to Universal Studios. The convention packet with price and schedule will be online soon. If you have not attended the National

Convention, Convention Grants are available. Money has been set aside for this—do not be afraid to apply for a grant! It's okay to step out of your comfort zone. I may have never attended a National Convention had I not applied for a Convention Grant in 2001!

Mu Alpha Theta has again partnered with Study Buddy, an online math and science tutoring program that serves students in underperforming middle and high schools. Your students can earn service hours for their participation and even win a trip to the 2014 National Convention. Visit the Mu Alpha Theta website button labeled "Study Buddy Tutoring" for more information.

Don't forget to contact your middle school associates and tell them about Chi Alpha Mu, our middle school and junior high math club. Information is available at [www.chialphamu.org](http://www.chialphamu.org). You will eventually inherit their students, so piquing their interest in a math club before high school will pay dividends for you later.

Finally, if you have questions or suggestions contact your Regional Governor or Kay Weiss, Executive Director of Mu Alpha Theta.

I hope you have a great school year!

  
Mu Alpha Theta President

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## KALIN AWARD CHANGES

The most prestigious student award Mu Alpha Theta presents is the Kalin Award. The \$2,500 cash award recognizes a graduating high school senior who has excelled in mathematics and performed notable service to Mu Alpha Theta communities. The award may instead be accepted as a scholarship.

Up until this year, only students attending the National Convention were eligible to apply, since all finalists for the award are interviewed by the Governing Council at the summer convention. The award application was due in previous years by June 15.

The Kalin Award is **now open to all graduating high school members** and the postmark deadline for the application has been moved up to **March 1st**. If a member is applying for a Mu Alpha Theta Scholarship and the sponsor wishes to also nominate that student for the Kalin Award, the student does not need to do anything extra (nor even know of her/his nomination for the Kalin Award). The scholarship application is filled out and compiled by the student as before, but the sponsor can now check the box for the Kalin nomination on their scholarship recommendation letter and include the added paragraphs as to why your student deserves this additional honor.

Since only two students may be nominated per chapter for our scholarships, there is now also the possibility of selecting a third student and submitting their name for the Kalin Award. If the Kalin nominee is NOT a scholarship nominee, the full Kalin Award application must be filled out, including information provided by the student. In this case, the student's nomination for the Kalin Award will be known to the student.

Remember, if you nominate a scholarship candidate for the Kalin Award, you MAY NOT submit another student's name on the Kalin Award application form. **Only one student per chapter may be nominated for the Kalin.**

For more information, please download the applications found on our website.

## NATIONAL OFFICE NEWS *from Kay Weiss*

I hope your new school year is off to a great start. The 2012-2013 school year was another very successful one for Mu Alpha Theta. We were able to offer \$166,000 in scholarships, as well as grants and awards. We almost hit 100,000 student members for the first time in the history of the organization. Before we transferred over 49,000, 2013 graduates to our Graduated Members table in the database, we listed 99,980 student members. Now we start a new school year. Our goal by June 2014 will be to meet or exceed service to 100,000 talented math students around the country and in the nineteen foreign countries with chapters.

We have much to offer you and your students this year again. Elsewhere in this newsletter are offers for scholarships, awards, grants, free stuff, and information about our free math competitions that your students can participate in right at your school. We have continued to add links and problem sets to help you find interesting things to do during chapter meetings. Some of our sponsors have written up ideas that we now link to by a tab at the top of the Teacher Resource page. I hope you will look through our website and explore all it offers,

The summer National Convention is always a great opportunity to have your students meet other math enthusiasts from around the country. We hope you will join us in Orlando this summer. If you haven't attended before, see the offer for a Convention Grant to attend for free.

Please apply for Chapter Grant funds. We budget more money than we give away, and I would love to run out of money supporting your chapter! Funds can be used to support your chapter activities and to enhance your meetings. The newsletter includes some stories about how others have used these funds. Think creatively and think big.

We passed new rules for associates last year that you should review. If a student has had at least two semesters of math at the algebra or geometry level and they are in their third semester, they may be listed as an associate of your chapter. This student is NOT a member of Mu Alpha Theta and doesn't pay a registration fee to be included. They may not run for chapter office but can attend your meetings and compete in our national competitions for free. Many also attend the summer convention. Students listed in our database as an associate, however, may only be left in the table for ONE school year. After that time, they must either be removed or pay their registration fee of \$10 and become a member of Mu Alpha Theta. Starting in the summer of 2014, we will remove all associates from the database that have been listed for over a year.

Remember that by our minimum standards, any student in their fifth semester of math, with the appropriate math GPA should be registered with us as a member. We can't offer grants and scholarships to students that aren't members. This year, we will enforce the policy that unless a student has been a member for at least a full semester, they will not be given a Summer Grant. Too often, a really talented student is eligible for \$2,000 in the summer, but their name was left off the membership list in the fall or the previous spring. They don't qualify for a grant under this membership clause. In the past, I have waived this when the student has paid their registration fee but the sponsor has not followed through to list them in the database. **BEGINNING THIS YEAR, WE WILL NOT PROVIDE FUNDING TO ANY STUDENT THAT YOU HAVE NOT SUBMITTED AS ELIGIBLE.** Please check your records! I hate penalizing a student whose sponsor overlooked their name. If you have a student that would like support the next summer, make sure they are submitted to us in the fall semester, even if this is not usually when you submit names. We

really LIKE giving our money to support these students. Please help us to do so.

Finally, remember **we do accept freshmen as members**, if they meet our qualifications. If you enter your members when they first qualify, we have more time to support them.

Note that the National Office will be closed for all national holidays. We also take off the Wednesday before Thanksgiving and are closed from December 23 until January 6, 2014. Estimate the mailing time needed for your order to arrive when it is submitted, especially if a national holiday is coming up. Give us time to mail your order so it arrives when you need it. If your order is under 13 ounces, it is going to be mailed first class and that means up to a week to get to you from the time it leaves the office. We continue to send most orders out the day you enter the order.

Please pool your orders so we aren't sending out three orders of one certificate each to you. That is expensive and time consuming. In the month of April alone last spring, we mailed out 9,300 certificates, 7,500 honor cords, and other merchandise.

Have a great year and give us the opportunity to serve you and your students! Thank you for the time you invest in these future mathematicians, scientists, doctors, and leaders.

## NEED-BASED STUDENT CONVENTION SCHOLARSHIPS FOR THE 2014 ORLANDO CONVENTION

This past summer, Mu Alpha Theta provided thirteen Need-Based Student Convention Scholarships for the first time to the San Diego National Convention. Any chapter that attended the convention could request an \$800 scholarship for one of their students in need of financial support. The scholarship paid the student's \$550 registration fee to the convention and up to \$250 in transportation. Schools attending the 2014 Orlando Convention will also be eligible to apply for one of these scholarships. Need-based proof is minimal and the selection of the student is left up to the teacher traveling to nationals with the students. For instance, after one school decided to attend, they simply researched which of their members were on free or reduced lunch and then selected those that qualified. The teacher selected a student who would benefit from the summer trip and handed the student the paperwork for the scholarship. This allows the student receiving the scholarship to remain anonymous to others in the chapter. Nobody but the student and the teacher knew of the support.

This year, we will open these scholarships to students attending a private school on financial aid. We have some students, even at private schools, that cannot afford to attend our convention. It is the goal of these scholarships to allow more students to experience the excitement and fun of a Mu Alpha Theta National Convention.

If you are planning on being in Orlando, please look into providing one of these scholarships to a student at your school. Also, remember we are offering a limited number of \$2,800 Convention Grants for new schools to attend the convention.

Connect with Mu Alpha Theta and Chi Alpha Mu through facebook. Add us as one of your favorite pages today. See you online!





## *new!* SCHOLARSHIP CHANGES

In 2013, Mu Alpha Theta awarded \$166,000 in scholarships to graduating high school members. This year we will continue to provide these \$4,000 scholarships and two \$5,000 scholarships – the Mary Rhein Memorial Scholarship and the Sallie Scudder Memorial Scholarship. **HOWEVER, ONLY TWO STUDENTS PER CHAPTER MAY BE NOMINATED FOR A SCHOLARSHIP IN 2014.** This is a change from the former rule that allowed up to three students to be nominated per chapter.

In 2014, we will provide a separate scholarship application for our two-year college members with up to \$20,000 available for these scholarships.

Scholarship funds may be used within the first 18 months from the date the scholarship is awarded for tuition, fees, and books. Any graduating high school senior or two-year college active member of a current Mu Alpha Theta chapter is eligible. The nominee should be an outstanding mathematics student and should have shown loyalty and dedication to their Mu Alpha Theta chapter, enthusiastically participating in local projects with evidence of service in the area of mathematics. It is up to the chapter sponsor to determine what names to submit, if more than two students wish to apply. Outstanding members often have participated in local, regional, or national mathematics competitions with distinction. Members may apply for these scholarships by downloading the application from the scholarship link online. **The application must be postmarked by March 1, 2014.**

### FREE “HARD PROBLEMS” DVD

Mu Alpha Theta is offering a free copy of the DVD “Hard Problems” to any active chapter requesting one. “Hard Problems” is a feature documentary about the extraordinarily gifted students who represented the United States in 2006 at the world’s toughest math competition - the International Mathematical Olympiad (IMO). One DVD per chapter while supplies last.

### FREE MATHEMATICA SOFTWARE

Mu Alpha Theta has free copies of the computer algebra system Mathematica that it will award to a maximum of three students per active chapter. Students should be studying Calculus to receive a copy. To request copies, sponsors may email [matheta@ou.edu](mailto:matheta@ou.edu) with the names and email addresses of the students. The Mathematica software is a downloadable file and the license is good for one school year.

### THANK YOU TO THOSE WHO HAVE SERVED:

*Retired sponsors:*

**Marquette HS, Chesterfield, MO: Jeanne Werner, 18 yrs**  
Riverdale HS, Ft Myers, FL: Michelle Couch

**Robertsdale HS, Robertsdale, AL: Deborah Woods, 20 yrs**

Alonso HS, Tampa, FL: Ellen Hoel, 4 yrs

St. Francis Xavier HS, Sumter, SC: Shonda Blackwell

Oxford HS, Oxford, AL: Amy Graham

**Owings Mills HS, Owings Mills, MD: Joyce Goodson, 28 yrs**

Tarpon Springs Sr HS, Tarpon Springs, FL: Scott Decatur

De La Salle HS, New Orleans, LA: Ryan Romano, 3yrs

Waccamaw HS, Pawleys Island, SC: Kathy Williams

H.B. Plant HS, Tampa, FL: Mary Ferguson

**Socastee HS, Myrtle Beach, SC: Anthony Karpinski, 21 yrs**

Navarre HS, Navarre, FL: Teresa Brenton, 6 yrs

Central Gwinnett HS, GA: Melinda Thamer, 8yrs

Woodland Regional HS: Nancy Kiesel, 3 yrs

Academic Magnet HS, Charleston, SC: Linnea Wildenradt

**North Pike HS, Summit, MS: Joyce Deer, 20 yrs**

Quincy HS, Quincy, MA: Evelyn Ryan

Wakefield HS, Raleigh, NC: Ruth Reece, 4 yrs

Mercy HS, Burlingame, CA: Joan Nocetti 2 yrs

Dresden HS, Dresden, TN: Brenda Morrow

Apopka HS, Apopka, FL: Katherine Grasso

St. Scholastica, Covington, LA: Steven Kraus & Dollie Heinz

### PROJECT MATH MINDS WINNER

Bianca Papa from West Forsyth HS in Cumming, GA won a \$5,000 award!

## *new!* ADDITIONAL FUNDING FOR ANDREE AWARD RECIPIENTS

Each year, Mu Alpha Theta presents the Andree Award to one high school senior and one former member, currently at a college or university, who plan to teach mathematics. The award consists of a \$2,500 prize or scholarship. Beginning this year, Andree Award recipients will have the opportunity to receive an additional \$1,500 to supply their classroom with materials or for professional development when they begin teaching mathematics or a related discipline. Recipients will need to fill out an application for the funding which will include verification of employment in the field listed. The application will be available online soon!

## SIGN UP FOR THE STUDY BUDDY TUTORING PROGRAM THIS YEAR!



Study Buddy is the nation's only online peer-to-peer volunteer tutoring program designed to address low math and science scores of underperforming middle and high school students. This homework assistance program utilizes online collaborative technology to bring students from different locations across the country together for online math, physics and chemistry homework help. Study Buddy relies solely on volunteers like you to help struggling students.

StudyBuddy

Study Buddy is excited to start another year of partnership with Mu Alpha Theta. Last year your students brought free online math homework help to over 14,000 students and this year we expect to reach many more! Our 2013-2014 program tutoring program will commence mid-September and we have made several enhancements to our platform that your students will love, including the launch of Study Buddy as an app for smart phone technology. Please visit our website for the exact launch date of tutoring and more details about our 2013-2014 program.

### Here is why Mu Alpha Theta chapters love volunteering through Study Buddy:

**Convenience** – Volunteering from your computer after school or at home, in the evening and/or on the weekend, the ability to schedule yourself in half hour segments and having the flexibility to choose when you wish to help makes Study Buddy an easy volunteer option. This year Study Buddy will be accessible on your tablet and smart phone for even more convenience!

**Make a real impact outside of your own school** – Mu Alpha Theta students will be paired with students who are struggling and may not otherwise have access to a tutor due to economic and/or geographic reasons. Student tutors commit to tutoring one hour per month. Participation will be tracked by software and will serve as community service credit hours. A unique tutor log book tracks each tutor's community service hours and saves each tutoring session automatically. Tutors have the ability to view an online summary of their volunteer community service hours at any time.

**Free online test prep!** Study Buddy offers SAT and AP review courses for all of its participants. As volunteer tutors, your students are invited to attend free online test review courses taught by expert and experienced classroom teachers, offered throughout the year. Don't miss out on this excellent opportunity!

**Teachers** - We encourage you to enroll your Mu Alpha Theta members in Study Buddy and can do so with minimal effort! Detailed reports of your tutors' activity will be emailed to you once a month and enable you to monitor your students' participation in the program and award community service hours at your discretion.

**2014 MU ALPHA THETA CONVENTION GRANT** – Study Buddy is proud to announce the fourth annual Mu Alpha Theta Convention Grant. NSTEP will provide up to \$2,800 to cover costs to attend the Mu Alpha Theta National Convention in Orlando, FL for three students and their teacher sponsor from one school. All chapters participating in Study Buddy are eligible to compete for this grant. Congratulations to Bergen County Academies in Hackensack, New Jersey, winner of the 2013 Convention Grant!

Please email [gmartin@studybuddyhelp.org](mailto:gmartin@studybuddyhelp.org) to sign up your chapter today! [www.studybuddyhelp.org](http://www.studybuddyhelp.org)

# SPONSORS

## SPRING ELECTIONS

Elections will be held this spring for the President-Elect, Region III Governor, and Region IV Governor. More information on the duties of these positions and the Governing Council can be found by reading the National Constitution posted on the Mu Alpha Theta website under About Us > Governance.

To make a nomination, please send the name of the person you are nominating, which position they are being nominated for, and the nominee's contact information to the National Office at [matheta@ou.edu](mailto:matheta@ou.edu) and it will be forwarded to the Nominating Committee.

The Nominating Committee will meet in January to select candidates and a ballot will be emailed to chapters. Each chapter has one vote.

In February, changes to the National Constitution will be submitted to the chapters for a vote. Since some changes may affect the spring elections, you will be asked to decide these prior to the election of officers.

## NATIONAL CONVENTION GRANTS

**Mu Alpha Theta will award a limited number of \$2,800 Convention Grants to the 2014 Orlando Convention.**

Each grant will cover free registration for a sponsor and three students, who must not have graduated before the convention. Remaining funds may be used for additional student registration costs or to reimburse travel expenses. To be eligible for a grant, a Mu Alpha Theta chapter cannot have attended a National Convention previously. The intent of the grant is to allow the teacher and students to experience a National Convention. Only schools who have a math sponsor and three eligible students should fill out the application.

The application deadline is April 1st. Schools selected will be contacted before the end of April by phone and email. The only responsibility of the winners is to fill out a survey after the National Convention regarding their experiences. Applying schools should be ready to submit convention registration information should they be selected. Winners of the grants are encouraged to bring more than three students. Additional attendees will be granted the early bird registration rate, as long as full payment for them is received by the May 15th deadline. Go to the grants section of [www.mualphatheta.org](http://www.mualphatheta.org) to download an application.

## WE WANT TO HEAR FROM YOU!

Mu Alpha Theta wants to know more about all the adults that make your chapter run smoothly. Please have each sponsor, moderator, coach, or other adult that helps to run your chapter fill out a separate survey.

**The link to the survey is**  
**<https://www.surveymonkey.com/s/MuAlphaThetaSponsorSurvey1>**

The survey link will be posted on the home page of [www.mualphatheta.org](http://www.mualphatheta.org) and emailed out to sponsors as well.

**Please respond to the survey by Sept 25th.**

## CHAPTER GRANTS

Chapter Grants will provide **up to \$1,000 for chapter activities** which stimulate an interest in mathematics. No chapter will be granted more than \$1,000 over time, but a chapter may apply more than once if they have not reached their \$1,000 limit. Go to the grants section at our website for ideas. Please remember that grants will be competitive and not all grant requests may be funded.

### MOUNT RAINIER HS CHAPTER ATTENDS UNIVERSITY-RUN MATH DAY

“The Mount Rainier High School chapter of Mu Alpha Theta, in Des Moines, WA, had the unique privilege of sponsoring a field trip to the University of Washington’s Math Day, an event replete with seminars in applied science, math, engineering and technology, for our chapter members and other students with a desire to explore careers in math or with a genuine interest to further their understanding in these fields. This excursion would not have been possible without the help of the Mu Alpha Theta Chapter Grant which provided for the transportation expenses.

As an academic community, one of our mission goals is to not only encourage excellence in mathematics, through the study of advanced mathematics in club meeting along with regional and national competitions, but to also open up opportunities to students who may never have considered the wonders of learning math due to inherent difficulties in this subject. We aspire to help these students through tutoring and alternative experiences outside of the classroom, for which the UW Math Day trip is but one example of accomplishing this goal.

We had several students from our school attend this event. In a seminar format, several UW lecturers exposed our kids to a variety of topics in applied math, ranging from the application of the “Gale-Shapley algorithm which determines a matching between kidneys and kidney recipients in such a way that no better matching exists” to the relationship of the Fibonacci sequence to the Chinese game of Nim. It might also be said that our students gained considerable insight into college lecture styles and the common discourse that occurs in this environment.

Here are some common quotes from our participating students.

- “It was great to hear enthusiastic mathematicians talk about math in real-life situations, such as the application of sequences.” -Matthew Short
- “The topics dealing with different applications in math were very relatable to teenagers and it was nice to be exposed to a variety of lecture styles.” – Tyson Johnson
- “I loved the lectures that talked about complex statistics in health care.” – Jayze Crawford
- “The exposure to higher, college level math and applications inspired me to search for sources of higher level math in everyday life.” – Jayze Crawford
- “Learning how random numbers generator algorithms work, both currently and from an historical perspective, was very interesting.” – Jayze Crawford

Of course, these were but a few of the insightful comments provided by our students. It is our hope that we may continue to offer this opportunity for our chapter members and any other students who may show an interest in pursuing mathematics in the future and to encourage more students to become a part of the Mu Alpha Theta community.”

- Richard Roths, Mount Rainier High School sponsor



## BREWSTER RAISES MONEY FOR ST. JUDE CHILDREN'S HOSPITAL

By: Chapter Members Helen Najjar, Darcy Carlin, and Jamie Maguire

On Saturday, April 6th, the members of Mu Alpha Theta, Brewster's math honor society, ran their 4th annual Math-a-thon. Seventy third graders signed up to participate in this event. All the proceeds received were sent to St. Jude Children's Research Hospital to benefit the patients there.

When the kids arrive at the Math-a-thon, they are escorted to meet their group leaders. They are excited to do fun math activities while helping other children. They happily decorate bags where they will put all of the math work that they complete. After one and a half hours of rotating to different math stations, the third graders take a lunch break. While eating, they watch a video taken at St. Jude Hospital. The kids in the video explained their experiences at the hospital and how participating in this program will help countless cancer patients. When lunch is over, the Mu members bring the 3rd graders to the gym for interactive activities like basketball and freeze dance. This helps them release some energy after all their hard work. They are eager to get back to their math station when recess ends. They quickly put their brains back to work to solve their next set of problems.

Along with the third graders, the members of Mu Alpha Theta enjoy being part of the Math-a-Thon. Helping the third-graders improve their math skills while having fun is a rewarding experience. Besides completing workbook pages with the children, they build structures, go on scavenger hunts, and work with tangrams. The high school students bond with the children as the day goes on. All the members are happy to see so many children willing to help raise money for such a great cause.

At the end of the day, the parents arrive to pick up their children. Both the third graders and the high school students leave the Math-a-thon proud of everything they have accomplished.



## BUILDING A PURPOSEFUL MAΘ PROGRAM

by Bert Shoemaker of Evans High School in Evans, GA

In 2008, the Evans High School (EHS) math team, located in Evans, Georgia, was enjoying another year of strong performances and recognition, like prior years when our students found satisfaction from working together and sharing pure competition. The question came up: Where can we extend this positive energy?

**A. Try something.** How about putting on a math tournament? After extensive research, coordination, and confirmation from numerous participants, a city-wide tournament was scheduled at EHS. It seemed like the appropriate time to organize our math team students as the charter members of the EHS Chapter of Mu Alpha Theta (MAΘ). This resulted in recruiting far more students than were previously on the EHS math team. We had a very motivated group of students that organized, presented and ran the first-ever math tournament in Columbia County, Georgia. It was a big success and considered a first step toward continuing yearly tournaments, as well as identifying a focal mission for our MAΘ Chapter.

**B. Change happens.** In spite of our best intentions, the second annual math tournament at EHS had such a drastic drop in attendance that the program was suspended. But something more important took its place. Although our MAΘ members had been responsible for tutoring a minimum of six hours, it became increasingly important for us to provide members who would be available on a daily basis. This involved assigned tutoring in the media center after school and setting appointments with students who needed time outside the regular schedule. We became the go-to math tutoring source for counselors, principals, and parents.

**C. Making a difference.** In an effort by EHS to give struggling students extra face time with a teacher in their area of preference, a 30-minute power-period was wedged into the middle of the day. In 2011, this program was randomly assisted by members of MAΘ, but in 2012, our membership was divided into five rotating sections which supported several classrooms with math tutors. As a direct result of the MAΘ tutoring accomplished during these power-periods, many EHS students completed credit-recovery for courses that helped them to graduate on time. In my power-period alone, twelve of the thirteen students (92%) that signed up for credit-recovery completed the required tests and exam. The MAΘ tutors made a difference.

**D. Lessons learned.** These items may not apply to all circumstances at all schools, but they applied to EHS.

- 1) A good sponsor is hard to find. Whether there are two students on a math team or twenty, these students should be given the opportunity to compete. Too often the lack of sponsors for various reasons result in teams staying home. [This is the reason our in-house tournament went off line.]
- 2) Students can do it. Don't limit the opportunities that your students may be willing to attempt and accomplish. For many years our focus was only on going to math tournaments. Once we moved outside that mentality, the enthusiasm for greater responsibilities and higher achievements grew.
- 3) Have a good time. Competitions are many times as much a social event as they are a measure of student ability. Competing as a team brings school spirit and unity. The positive attitudes will have a direct influence on greater effort and support.
- 4) Math Team is a sub-unit of MAΘ. In our case, MAΘ grew out of our math team. Now the child is the 'parent'! For us, this is a big advantage. When non-math team members learn about math tournaments at our monthly MAΘ meetings they become interested and are soon participating at tournaments. All of

our officers happen to be math team members, but math team members don't have to be members of MA $\theta$ .

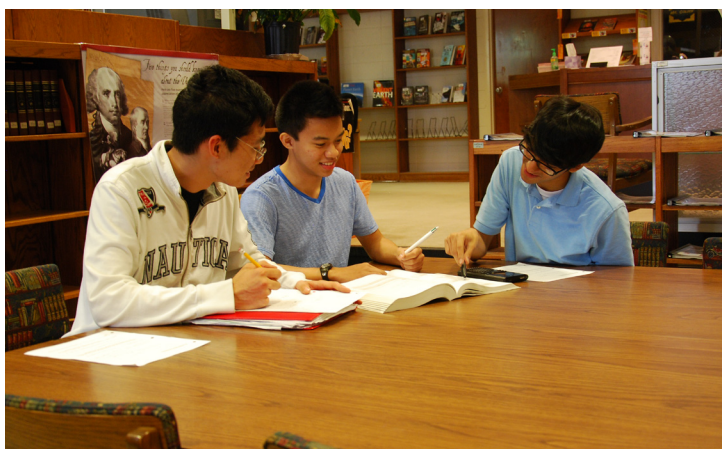
5) This is important work. Not that there aren't other important clubs in any school, but when a chapter of MA $\theta$  focuses on contributing to the success of the whole school, then everyone benefits.

6) Delegate. This was my biggest challenge. The program doesn't run itself and there is a lot of work to keep things going, so the members (primarily the officers) must achieve the goals and requirements of MA $\theta$ . The more MA $\theta$  members that can assume responsibility for areas of the operations, the sooner they will take ownership of the program.

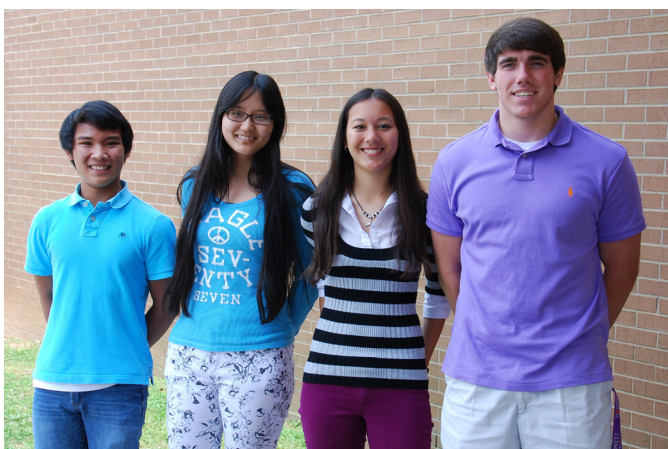
7) Service, achievement, competition, and excellence. Our mission emphasizes the need to maintain an example to others and promote excellence. There are also a fund-raising drives to help the county food pantry and support Christmas charities.

\* See the Evans High School MA $\theta$  website for our sign-up form, constitution, meeting minutes, and tutoring schedules, located at [http://www.edline.net/pages/Evans\\_High\\_School/Activities/Math\\_Honor\\_Society](http://www.edline.net/pages/Evans_High_School/Activities/Math_Honor_Society)

We don't have all the answers, but we are willing to try new ideas and usually good things happen. In 2009, we inducted 80 charter members. Since then, we've maintained about the same numbers, with our latest class having 86 members (57 new inductees). Enthusiasm for the future remains strong. I hope this provides insights to the benefits for establishing a chapter of Mu Alpha Theta. Personally, it is a privilege to work with some of the most talented young adults at Evans High School. They will go on to become significant contributors to our community and our country.



*Chapter members tutoring in the media center.*



*2013-2014 Evans High School MA $\theta$  Officers*

## *Free* TI CALCULATORS!

Mu Alpha Theta has a very limited number of TI-84 Plus graphing calculators remaining to give away this year. We will provide one calculator to a school to give away as a prize at a competition it is running, to a special club member, or to auction off to raise money for their chapter.

Should we acquire additional graphing calculators from Texas Instruments, we will notify chapters.

Due to the limited supply remaining, we will only provide a calculator to a chapter that has not received any in the past. If interested in receiving one, please email [matheta@ou.edu](mailto:matheta@ou.edu) today!



## CHAPTER NEWS

### MU ALPHA THETA MEMBER AWARDED \$75,000 AT INTEL SCIENCE TALENT SEARCH AWARDS

Jonah Kallenbach of Ambler, PA came in second place at the Intel Science Talent Search this past March for his research entitled *Characterizing and Identifying Interactions of Intrinsically Disordered Proteins* and was awarded a \$75,000 scholarship. Jonah graduated from Germantown Academy and was a member of the Mu Alpha Theta chapter led by Sponsor Ruth Carver.

According to Jonah's bio on the Society for Science & the Public's website, "Jonah...submitted an Intel Science Talent Search bioinformatics and genomics project that breaks new ground in predicting protein binding for drug therapy. Jonah solved an open problem first posed several years ago about segments in protein chains called "disordered regions" that have inconsistent three-dimensional structures. Jonah's research advanced methods for predicting interactions between disordered regions and their binding partners. He validated his results with proteins coded by the cancer-associated BRCA1 gene. His work may open a new paradigm of drug design in which disordered regions can be used as promising new drug targets, and has already attracted attention from a pharmaceutical company."

The Intel Science Talent Search is an annual competition run by the Society for Science & the Public. For more information, please go to <http://www.intel.com/content/www/us/en/education/competitions/science-talent-search.html>.

### TWO MU ALPHA THETA MEMBERS NAMED USAMO WINNERS

David Stoner, South Aiken High School in Aiken, SC, and Bobby Shen, Dulles High School in Sugar Land, TX, were selected among the top twelve scorers in the 42nd USA Mathematical Olympiad.

From over 350,000 students that compete in the American Mathematics Competitions, about 10,000 are invited to take the American Invitational Math Exam in the spring. From this group about 500 students are invited to take the USA Math Olympiad exam in May. The top twelve winners meet for the official award ceremony at the State Department in Washington, DC in June.

Mu Alpha Theta financially supports these competitions and provides financial support to bring any member's sponsor to the award ceremony, should one of our members be among the top twelve. This summer, Feng Li, formerly Bobby's sponsor from Dulles High School, joined Bobby as our guest in Washington.

The morning after the award ceremony, the twelve finalists join other high scoring students at the Mathematical Olympiad Summer Program, an intensive program held at the University of Nebraska-Lincoln. At the conclusion of the program, six students from the top twelve are selected to compete in the International Mathematics Olympiad. This year the IMO was held at a Colombian beach resort in mid-July. Bobby Shen was among those six competitors and came home with a gold medal. The team took third place in the competition behind China and South Korea.

We are very proud of our members and the devotion of their sponsors.

## CHAPTER SNAPSHOT: QUEEN OF PEACE HS



LOCATION: Burbank, IL  
SCHOOL POPULATION: 300  
MEMBERS: 13  
SPONSOR: Judy Canning  
CHARTERED: June 26, 1986

Queen of Peace High School's chapter members participated in World Maths Day this past school year as well as other regional mathematics competitions. In addition to competition activities, they also held a Pi Day celebration at their school.

Want to see your school in the newsletter? Email your chapter snapshot to [matheta@ou.edu](mailto:matheta@ou.edu) for a chance to be featured.

## SCIENCE AND ENGINEERING FAIRS

Have your members participated in a local or regional science and engineering fair? Mu Alpha Theta continues its ongoing support of a special "Mu Alpha Theta Award" at regional and international competitions. Mu Alpha Theta also provides \$6,000 in cash awards each year at the Intel International Science and Engineering Fair in May and provides judges to the event.

The Mu Alpha Theta Award is given to the most challenging, thorough, and creative investigation of a problem involving mathematics accessible to high school students. Components of the investigation may include, but are not limited to, mathematical proof, mathematical modeling, statistical analysis, visualization, simulation, and approximation.

### The 2013 International Science Fair Award Winners were:

Vinay Sridhar Iyengar  
Oregon Episcopal School in Portland, OR  
He won a \$3,000 prize for his project: *Efficient Characteristic 3 Galois Field Operations for Elliptic Curve Cryptographic Applications*

Hannah Kerner Larson  
South Eugene High School in Eugene, OR  
She won a \$2,000 prize for her project: *Classification of Some Fusion Categories of Rank 4*

Rishi Suvir Mirchandani  
Fox Chapel Area High School in Pittsburgh, PA  
He won a \$1,000 prize for his project: *Superadditivity and Subadditivity in Fair Division*

*Thank you for all you do and for helping us to serve you better!!*



## CONTESTS & COMPETITIONS

### ACTUARIAL FOUNDATION'S PROJECT MATH MINDS COMPETITION

**Give your students real-world math experience and the chance to win up to \$5,000 in scholarship awards!**

**Project Math Minds** is an actuarial-related project designed by The Actuarial Foundation for Mu Alpha Theta high school students to work on during the school year. Developed and evaluated by actuaries, the purpose of the **Project Math Minds** assignment is to introduce students to the math used by the actuarial profession to manage risk.

The 2013-2014 assignment challenges students to use the math of debt, interest rates, and economics to complete an estimate of the total cost of attending college and the financial return after leaving college.

Encourage your students to take part in the competition and gain hands-on experience while competing for a scholarship award. Students can even consult volunteer actuaries to guide them and answer their questions as they develop their projects. The top project will be eligible for a \$5,000 scholarship.

Visit [www.actuarialfoundation.org/programs/youth/MuAlphaThetaProject.shtml](http://www.actuarialfoundation.org/programs/youth/MuAlphaThetaProject.shtml) for rules and submission guidelines. Projects must be postmarked by **February 3, 2014**. Winners will be announced by **April 3, 2014**.

### ROCKET CITY MATH LEAGUE

The RCML is a free, year-long, international math contest open to all middle, high school, and two-year college students enrolled in Pre-Algebra through Calculus and above math courses. It is administered by the students at Grissom High School in Huntsville, AL and supported by a grant from Mu Alpha Theta.

Participants are placed into one of five divisions based on the level of math courses in which they are enrolled. Each division will be given three, 10 question tests lasting 45 minutes. A two-level, interschool team test is also available. Tests are sent to registered schools via email before each round, and scores are entered into an online database. Trophies are mailed to the top-ranked students and schools at the end of the year. Mu Alpha Theta also provides other prizes as well. Testing dates for the 2013-2014 competition are:

- **Interschool Test: Oct 21 – Nov 1, 2013**
- **Round One: Jan 13 – 24, 2014**
- **Round Two: Feb 10 – 21, 2014**
- **Round Three: March 10 – 21, 2014**

Register at [www.rocketcitymath.org](http://www.rocketcitymath.org). For more info, visit the contests section at [www.mualphatheta.org](http://www.mualphatheta.org).

### AMC

AMC 8: **November 19, 2013**

AMC 10A/AMC 12 A: **February 4, 2014**

AMC 10 B/AMC 12 B: **February 19, 2014**

AIME I: **March 13, 2014**

AIME II (Alternate): **March 26, 2014**

USAMO: **April 29 & April 30, 2014**

For registration deadlines, please go to <http://www.maa.org/math-competitions/about-amc/events-calendar>

### LOG 1 CONTEST

This is an excellent opportunity for schools to participate in a mathematics competition similar to our National Convention contests. Schools compete against other schools from across the country and the world, while staying right at their own school.

The 2013-2014 Log 1 Contest will be run by the Hoover High School Math Team in Hoover, AL. The contest will consist of three rounds. In the first round, students take one of two tests: Functions or Equations. These will be available for download on **Dec 1, 2013**. Each Topic Test will consist of fifteen open-answer problems to be solved without a calculator in thirty minutes. The second round tests are Areas & Volumes or Complex Numbers and will be available for download on **Jan 1, 2014**. The third round is an individual test of general mathematics knowledge and will be available for download on **Feb 1, 2014**. Problems will range from easy to difficult in an effort to provide confidence and challenges to all students.

**In addition to other awards, Mu Alpha Theta will award 100 e (\$271.82) to each of the top ten schools in each region, for a total of \$10,872.80 in prize money.**

The Log 1 contest is FREE, but participation is restricted to schools with active Mu Alpha Theta chapters. To register or for more info, see the *Contests* section of [www.mualphatheta.org](http://www.mualphatheta.org).

### MATHEMATICAL MINUTES VIDEO CONTEST

The Mathematical Minutes Video Contest continues this year. We are looking for chapters to make a 2–5 minute math video that teaches a math idea or shows an interesting math problem in an entertaining way. Last year's winners can be found online under *Contests > Mathematical Minutes*.

Eight finalists will be posted online for other chapters to view and vote on their favorites. Up to \$2,250 will be split between the winners, amounts to be determined by the Governing Council.

Videos need to be posted on YouTube before midnight EST, **February 28, 2014**. To view guidelines and a short video presentation about the contest, go to [www.mualphatheta.org](http://www.mualphatheta.org).

# STUDENTS

## MESSAGE FROM YOUR STUDENT DELEGATE PRESIDENT

### NATIONAL STUDENT DELEGATE OFFICERS:

#### PRESIDENT

Sanchit Bhattacharjee  
Region IV  
John A. Ferguson Senior HS  
Miami, FL  
sanchit@bellsouth.net

#### VICE PRESIDENT

Je Kim  
Region II  
Alfred M. Barbe HS  
Lake Charles, LA  
kimjehyung@yahoo.com

#### SECRETARY/TREASURER

Vinai Oddiraju  
Region III  
Marion HS  
Marion, IN  
vinai\_oddiraj@yahoo.com

#### PARLIAMENTARIAN

Sabrina Aztbach  
Region I  
Mount Rainier HS  
Des Moines, WA  
sababylonian4flute@gmail.com

Hello everyone,

I hope that all of you who went to nationals this year had a great time and left with unforgettable memories, as I did. At this year's national convention in San Diego, students from across the nation, all sharing a common love for mathematics, came together in order to compete in various topics ranging from angle chasing to trigonometry to linear algebra. However, in addition to just math, we also participated in amazing activities, such as the mixer, the cruise on the harbor, and the trip to the zoo. What truly makes each of these conventions great is the amazing friends that you make. One of the toughest parts of leaving a convention, aside from time zone differences and adjusting to non-mathematical life, is the fact that the convention is the last time that you will be seeing many of the graduating seniors who have welcomed and guided you through your MA $\theta$  experience. I'd thus like to thank all of the graduating seniors who have been essential to welcoming younger students, such as myself, over the past four years and contributing greatly to the MA $\theta$  experience.

Three years ago, I would have never have imagined that I would have the chance to travel to Boston and San Diego for a week to attend a National Mu Alpha Theta Convention. And yet, here I am, three years and two national conventions later, reflecting back on those amazing experiences. The fact that about twenty dedicated students and an amazing sponsor could gather funding, grind through tedious field trip paperwork, and work out logistics to go to a conference laden with like-minded individuals, armed only with the motivation of mathematics, is what makes Mu Alpha Theta great. If anything comes out of this message, I hope that my school's story shows that it is truly possible

for any MA $\theta$  chapter, regardless of size or funding, to be able to come to this amazing convention.

Finally, while running for president, one focus of my speech was about the importance of ideas. Ideas and suggestions are essential to this organization's growth and improvement, and that's why if anyone has an idea that can improve the convention, feel free to contact me at sanchit@bellsouth.net. Who knows, you might even see that idea implemented at next year's convention. Other than that, I hope to see all of you at next year's convention in Orlando, FL!

*Sanchit Bhattacharjee*  
Student Delegate President

For more information about the Mu Alpha Theta Student Delegate Assembly, see the About Us section of our website and click on Officers > Student Delegate Officers.

## SUMMER GRANT EXPERIENCES

**Each year, Mu Alpha Theta offers Summer Grants of up to \$2,000 for full members to work on a mathematical research project or attend a summer mathematics course not available at their high school or two-year college.** Would you like to participate in a program like those described below? Here are reports from two of last year's recipients:

**Karen Yang from Klein High School in Spring, TX attended the Summer Science Program:**

Throughout my tenure at SSP (New Mexico campus) for the past five and a half weeks, I have grown so much from my experience that I can hardly imagine what my life would be like without it. Calling SSP amazing would only be an understatement - The packed schedule consists of morning lecture (math and physics), afternoon lecture (astronomy), homework sets over math, physics, astronomy, and python programming, field trips to local museums and geographical sites, and frequent guest lectures. Established in 1959, SSP is also steeped in tradition through its various activities, many of which we were left to discover for ourselves. After the rush of daytime activities came long nights under the stunning New Mexico night sky; all 36 students were divided into teams of 3 to observe their assigned asteroid at the local observatory roughly once every 4 days. Fighting against the weather, we took many sets of images in an attempt to pinpoint our asteroid in the sky. Once found, we would use self-written python programs to determine its location and orbital elements to aid us in determining and predicting the asteroid's orbit. Through this, I have discovered so much from astronomy; I not only learned new concepts, various measurements of time and location, and how to control a telescope, but also spotted my first meteor and identified constellations against the rich night sky.

This schedule ensured many busy weeks of nonstop activities, and we often stayed up late to keep up with our work. At once stressful and exhilarating, emotions ranged from nearly overwhelmed to that brilliant moment of clarity when you finally understand an elusive concept to intellectual hilarity when your friend comes up with a ridiculous but mathematically intriguing problem on pizza cutting. As such, survival here depended on teamwork, a concept that took on a whole new level...Under the mentorship of Professor Faison, Andersen, and Shipman, I was equipped with newfound knowledge that not only further broadened my field of view on math and science, but also my perspective on learning and of life itself, and would otherwise have never encountered at school or elsewhere. SSP not only forced me to realize my potentials and limits by pushing me to the max, but also reinforced my passion for math and science. I'd like to thank everyone at SSP and Mu Alpha Theta for their hand in building this beautiful experience, as it became so much more than I would have ever expected, and strongly encourage anyone willing to risk a new journey to apply in the future!"

**David M. Li from Basha High School in Chandler, AZ attended AwesomeMath:**

"I attended the AwesomeMath program at the University of Texas at Dallas, which is slightly shorter than their other camps (5/2 weeks vs 3 weeks) but contains just as much mathematics! The classes were quite rigorous and enjoyable; they consisted of a 90 minute lecture followed by a 90 minute problem-solving session, where the students would work together on problems. As I took level 2 classes, the instructors focused on proofs as well as computation; most of the "homework" problems consisted of proofs...In modular arithmetic, we learned standard number theory concepts - Euler's theorem, divisibility, and so on - and how to apply them to AIME/USAMO-style problems. Counting strategies also focused on standard combinatorics techniques, such as generating functions, and was more computationally oriented. The professors covered material quite quickly, but at the end of the camp, we all received copies of their notes and problems for personal use, as well as two math books of our choice.

In the evenings and on the weekends, the camp offered many recreational activities - pool, ping-pong, and so on. As our camp was shorter, we had only Sundays off and did not go on field trips; we still had the scavenger hunt and team competition, however! Several forums were given by the residential advisors/teacher's assistants, covering various mathematical topics; we also had office hours in the evenings, where you could ask the teachers about the assignments.

Overall, I quite enjoyed this opportunity to learn mathematics and am thankful to Mu Alpha Theta for the opportunity. I feel that the topics covered here will be helpful on the AIME and other competitions and recommend this camp to anyone interested specifically in competitive mathematics."

# ORLANDO NATIONAL CONVENTION

JULY  
20 - 25



DOUBLETREE  
HOTEL

The 44<sup>th</sup> Annual Mu Alpha Theta National Convention will be held July 20-25, 2014 in Orlando, FL at the DoubleTree Hotel at the Entrance to Universal. Chapters will have the option of going to Disney Parks, Universal Parks, or SeaWorld for an additional charge.

Before April 1: \$550 Early Registration

After April 1: \$590 Regular Registration

Sponsors requesting single rooms will need to pay an additional \$350. All registration must be postmarked **by May 15th**. Visit [www.mualphatheta.org](http://www.mualphatheta.org) for more information!

## CONGRATULATIONS TO THE 2012-2013 SCHOLARSHIP WINNERS!

### MARY RHEIN MEMORIAL SCHOLARSHIP:

Pablo Hernandez of Miami Springs Sr High School in Miami Springs, FL: Stanford University

### SALLIE SCUDDER MEMORIAL SCHOLARSHIP:

John Gee of Calhoun High School in Port Lavaca, TX: Harvard University

### MU ALPHA THETA SCHOLARSHIPS:

Rohan Batra: California Institute of Technology  
Yash Bhatia: Washington University in St. Louis  
Emily Burlison: Coast Guard Academy  
Ian Christen  
Casey Crownhart: MIT  
John Deeble: University of Alabama  
Colin Defant: University of Florida  
Kientay Filmore: Winthrop University  
Maria Florez: Florida International University  
Steve Han: University of Chicago  
Diego Hernandez: Stanford University  
Magda Hlavacek: Harvey Mudd College  
Sameer Kailasa: University of Chicago  
Alice Kim: Bowdoin College  
Ryan Lake: Johns Hopkins University  
Linda Liu: MIT  
Manfei (Annie) Ma: Dartmouth College  
Botong Ma: MIT  
Holly Merrell: Blinn College  
Sri Harsha Palakurty: University of South Florida

Zhicheng Qiao: Duke University  
Lakshmi Raju: Georgia Tech  
Renuka Ramchandran: University of Miami  
Alayna Rupert: University of Alaska Anchorage  
Arley Ruskin: University of Florida  
Benjamin Sheff: University of California, Berkeley  
Lilly Shen: Harvard University  
Adam Slakter: MIT  
Bradley Snider: Princeton University  
Nicholas Sparkman: Vanderbilt University  
Hayley Sypniewski: MIT  
Benjamin Tong: Yale University  
Emily Anne Vargas: Florida State University  
Daniel Wang: Harvard University  
Xinnan Xu: University of Southern California  
Lauren Zadzilko: University of Connecticut  
Yi (Tony) Zeng: MIT  
Weiming Zhao: Harvard University  
Sisi Zheng: New York University